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IN THE

Supreme Court of the United States

OCTOBER TERM, 1930.

No. 68.

MILLER BROS. COMPANY,
Petitioner,

vs.

LEKTOPHONE CORPORATION,
Respondent.

BRIEF FOR RESPONDENT.

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No. 68.

MILLER BROS. COMPANY,

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LEKTOPHONE CORPORATION,

Respondent.

BRIEF FOR RESPONDENT.

Petitioner's statement of the case is so involved with irrelevant discussion of another Hopkins patent (1,271,527) not in this case, and by assumptions about what the Second Circuit Court of Appeals the Southern District Court of Ohio (Western Division) and the Ninth Circuit Court of Appeals* might have decided as to the validity of the patent here in suit (1,271,529) if those courts had not put the question of validity aside and rested their

*The patent has been much litigated in this country and the corresponding patent has been much litigated abroad. The validity of the patent has repeatedly been affirmed by the Courts in this country and abroad. Accused devices of different forms have been adjudicated. Some have been held to infringe and others have been held not to infringe. All these opinions have been printed in a pamphlet entitled "Lektophone Litigation—Opinions and Decrees" which will be filed with this brief, and herein cited as—Pamphlet, page ....

decisions on the question of infringement, that it seems to us necessary (Rule 27, Par. 3) to supply the following:

Statement of the Case.

This case (No. 68) involves the scope and validity of Hopkins' patent 1,271,529, issued July 2, 1918, for an "Acoustic Device" (loudspeaker). It comes to this Court on writ of certiorari issued October 5, 1930, to the Third Circuit Court of Appeals on the petition of defendant below. Conflict having arisen between the Ninth Circuit Court of Appeals in the *Rola case** and the Third Circuit Court of Appeals in the *Brandes case***, the *Rola case* (No. 19) was brought to this Court on certiorari issued January 27, 1930. On January 23, 1930, Morris, D. J., in the District Court of Delaware filed an opinion in the instant case * * * in which he held (Tr., 14):

> "The evidence in the case at bar differs in no substantial particular from that in the Brandes case. Hence, the decree of this Court, in the pending case, must be dictated by the decision of the Circuit Court of Appeals in the Brandes case unless the defense, here made for the first time, under R. S., 4897 is sound."

After that decision in the District Court an appeal was promptly perfected to the Third Circuit Court of Appeals, and this Court was petitioned to issue and did issue the writ of certiorari, before the Circuit Court of Appeals had passed on the case. On joint motion of the parties this case is set for argument immediately following the *Rola case* (No. 19).

**Lektophone Corp.* vs. *The Rola Company*, 34 F. (2d), 64.

***Lektophone Corp.* vs. *Brandes, etc., Corp.*, 20 F. (2d), 155.

****Lektophone Corp.* vs. *Miller, etc., Co.*, 37 F. (2d), 580.

The Issues.

The issues here are:

1. **Whether the Hopkins patent 1,271,529 represents patentable invention over the prior art.**

On this issue the Third Circuit Court of Appeals sustained the validity of the patent in the *Brandes case.* The Ninth Circuit Court of Appeals found it unnecessary to pass upon validity (Opinion, Rola, Tr., 130), and rested its decision on the question of infringement.

2. **Whether the patent is invalid under the renewal Statute, R. S., 4897.**

This issue is presented for the first time in the instant case. The District Court decided in favor of the patent—Opinion, Tr., 14-16.

3. **Whether defendant's two structures** (a larger one and a smaller one) **infringe.**

The Third Circuit Court of Appeals in the *Brandes case* held that two substantially identical structures did infringe. The Ninth Circuit Court of Appeals in the *Rola case* held that a structure substantially identical with the smaller of petitioner's two structures did not infringe.

The Invention.

The nature of Hopkins mechanical combination—the combination of a conical-shaped paper device of proper size provided with flexible edges coupled to a rigid frame used in free air—is set forth in our brief in the *Rola case* (No. 19) and need not be repeated here.

The Issue of Infringement Specifically Stated.

Both of petitioner's two accused devices have the conical-shaped paper device of the size the patentee said the cone should be; and in both the cone is coupled by a flexible peripheral rim or edge to a rigid frame. In both the flexible rim is made of cloth, instead of paper as in the preferred embodiment illustrated and described in the patent.

There is no difference other than this change of rim between either of the two accused devices and the structural embodiment disclosed in the patent.

In the smaller of petitioner's loudspeakers the whole diameter of the cone plus the rim is, because of the use of a narrower rim of more flexible material, slightly less than the nine inches specified in claims 1, 2, 3, 5, 6 and 7, but not specified in claims 4 and 8. In this the structure is the same as the *Rola* loudspeaker and as the smaller loudspeaker held to infringe in the *Brandes case.*

The larger of petitioner's loudspeakers has a tympanum (cone plus rim) whose whole diameter exceeds nine inches. In this the structure is the same as the larger of the two loudspeakers held to infringe in the *Brandes case.*

Summary of Argument.

1. **On the question of patentable novelty** of the Hopkins invention, we refer the Court to the argument in our brief in the *Rola case* (No. 19), where we developed the propositions that—

(a) **The Hopkins device is a three-element mechanical combination comprising a large, light, stiff paper**

cone, coupled by an annular plane peripheral rim to a rigid encircling frame, resulting in a practical direct-acting loudspeaker having a new mode of operation and a new result (Rola brief, pp. 8-18).

(b) Comparison of the patented device with the prior art shows that the invention lay in the new combination, not in the selection of the rim material, which was already old and the material of which is nowise essential so long as its flexibility is preserved (Rola brief, pp. 21-39).

2. On the question of infringement, we refer the Court to the argument in our brief in the *Rola case,* where we developed the propositions that—

(a) Defendant has copied that structure, making only a colorable departure thereform by substituting for the plane peripheral extension of the cone a narrower rim whose desirable flexibility is retained by making it of more flexible material (Rola brief, pp. 18-21).

(b) Neither the disclosure of the specification nor the patent office proceedings limit the broad language of the claims to a rim which is an integral plane peripheral extension of the cone, or otherwise exclude defendant's structure.

(c) On the contrary, change in claim language during the prosecution evidences the patentee's determination, in which the patent office examiner acquiesced (1), that the monopoly should not be limited to a rim which is an annular plane peripheral extension of the cone, and (2) that it should not be limited to exclude equivalent structures in which the overall diameter might be literally less but not substantially less than nine inches (Rola brief, pp. 40-63).

In applying the argument of the *Rola* brief to the instant case, it should be remembered that only the smaller of defendant's two loudspeakers has a whole diameter of cone plus rim slightly less than nine inches, attained without encroaching upon the recommended size of cone by using a narrower rim which is, however, made of more flexible material so that its desirable flexibilty is not impaired.*

In the larger of petitioner's loudspeakers, even this colorable departure from the physical embodiment disclosed in the patent is absent.**

To this we desire to add only the remark that petitioner sells to the same trade for the same purpose its larger loudspeakers and its smaller loudspeakers. It is thus made so clear that the slight difference between them does not affect the mode of operation of the three-element combination, and is not a substantial difference, that petitioner's counsel in his brief avoids all discussion of the overall diameter of the cone plus the rim. Counsel avoids that discussion by putting an interpretation upon the word "tympanum," as used in the patent claims, that excludes the rim of defendant's loudspeakers but includes the rim of the Hopkins loudspeaker (See our discussion of Petitioner's Brief, *post*, p. 22).

3. **In this brief we shall discuss the question whether the patent is invalid under the renewal statute, R. S.,**

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*The patent says (p. 2, lines 79, et seq.) that if satisfactory regeneration of sounds is to be had the whole diameter of the tympanum, that is, the diameter of the aperture in the supporting rings, should exceed nine inches, and the base of the conical portion should exceed in area one-half the area of the tympanum. Petitioner's smaller cone has a diameter of 7 inches (dimension b, Exhibit 5, Tr., 451) and the whole diameter of the tympanum is 8 inches (dimension a, Exhibit 5, Tr., 451). A cone whose area is one-half the area within a nine-inch circle has a diameter that is 6.36 inches (Tr., 155).

**In it the cone is 8½ inches in diameter (dimension b, Exhibit 5, Tr., 451) and the whole diameter of the tympanum is 9½ inches (dimension a).

4897. Respondent's position is that **the renewal in the instant case, having been filed within two years after the original allowance, in accordance with the requirements of Sec. 4897, is not subject to challenge; and that the subsequently filed divisional application, which was promptly filed and contained no new matter, has the valid status of the renewed application.**

4. Following that discussion, the remainder of this brief will state categorically respondent's position on the several points made in petitioner's brief.

The Defense Under Section 4897, R. S.

The facts are correctly stated by Morris, D. J., and are followed by his conclusions of law, as follows (Opinion, Tr., 14-16):

> "That section provides in part:
>
> 'Any person who has an interest in an invention or discovery, whether as inventor, discoverer, or assignee, for which a patent was ordered to issue upon the payment of the final fee, but who fails to make payment thereof within six months from the time at which it was passed and allowed, and notice thereof was sent to the applicant or his agent, shall have a right to make an application for a patent for such invention or discovery the same as in the case of an original application. But such second application must be made within two years after the allowance of the original application.'
>
> The original application, filed July 14, 1913, was allowed April 11, 1916, but the final fee was not paid within six months from such allowance. On March 22, 1918, twenty days less than the two-year statutory

period, the second or renewed application was filed. Six days later an amendment was filed cancelling claims 25, 26 and 27 with the statement that those claims had 'been cancelled, as those claims will be incorporated together with others, in a divisional application directed to the tympanum or diaphragm per se.' The divisional application resulting in the patent in suit was filed April 17, 1918, or six days more than two years after the allowance of the original application. The specification of the patent in suit states that the invention thereof 'is to be considered as a division of the invention shown and described in my prior application, renewed March 22, 1918.'

In support of its contention that the divisional application was invalidated by R. S., 4897, defendant relies upon *Chapman* vs. *Wintroath,* 252 U. S., 126; *Western* [*Weston*] *Electrical Instrument Co.* vs. *Empire Electrical Instrument Co..,* 136 Fed., 599 (C. C. A., 2) and *Dwight & Lloyd Sintering Co.* vs. *Greenawalt,* 27 Fed. (2), 823, 831 (C. C. A., 2). These cases do not, however, in my opinion sustain defendant's view. **They contain nothing,** particularly when read in connection with *Webster Co.* vs. *Splitdorf Co.,* 264 U. S., 463; *American Laundry Machinery Co.* vs. *Prosperity Co.,* 295 Fed., 819 (C. C. A., 2); *Diamond Power Specialty Corp.* vs. *Bayer Co.,* 13 Fed. (2d), 337 (C. C. A., 8); *Wagenhorst* vs. *Hydraulic Steel Co.,* 27 Fed. (2d), 27 (C. C. A., 6), **that denies to the divisional application, which was filed promptly after the filing of the unchallenged renewed application and contained no new matter, the valid status of the renewed application.''** (Emphasis ours.)

We can add nothing to this except, perhaps, a handy statement of the cases referred to.

In *Weston, etc., Co.* vs. *Empire, etc., Co.,* 136 Fed., 599 (C. C. A., 2, March 8, 1905), the patent was held invalid under R. S., 4897. The original application was allowed October 13, 1885.* The application was forfeited by failure to pay the final fee within six months and was renewed June 18, 1886. It was allowed a second time on June 30, 1886, again forfeited, and renewed again on December 14, 1887. The Court held that the final application "must be made within two years after the allowance of the original application, the term 'the original application' as used in this section meaning the first application." In so holding the Court approved the construction given to the section in opinions of the Attorney General (69 Patent Office Official Gazette, 639, 70 Ib., 493) of June 30, 1894 and January 18, 1895, which from that time had been acted on by the Patent Office (see 131 Fed., 91).

The Court said (136 Fed., 599):

> "The construction contended for by the appellant would permit an indefinite prolongation of a monopoly by means of unlimited forfeitures and renewals, and would nullify the policy of the law which requires diligence in the prosecution of applications for and issuance of patents."**

In *Chapman, et al.,* vs. *Wintroath,* 252 U. S., 126, decided March 1, 1920, Section 4897 was not involved. Chapman, et al., filed an application in 1909. In 1912, Wintroath filed an application upon which a patent issued November 25, 1913. The Chapman, et al., application of 1909 described, but did not claim, the subject-

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*See the decision of the District Court, 131 Fed., 90.

**Petitioner's counsel says in his brief (p. 12):

> "The evils which that section of the statutes sought to cure are present in full force in the present instance."

But clearly that is not true. In the instant case there was but one renewal, which is not challenged. The subsequent timely division of the renewed application did not, any more than any other lawful amendment, prolong the monopoly or delay the issuance of the patent.

matter of the Wintroath patent. On July 6, 1915, about twenty months after the issuance of the Wintroath patent, Chapman, et al., filed a division of the 1909 application, in which division the claims of the Wintroath patent were copied. An interference having been declared in the patent office the case came to the Court of Appeals of the District of Columbia. That court decided in favor of Wintroath on the ground that the delay in filing by Chapman, et al., for more than one year after the date of the Wintroath patent was equitable laches which barred the later application. This conclusion was by analogy from Section 4894, R. S.* This Court reversed that decision, measuring the presumptive period of equitable laches by the two-year rule of Sections 4886, 4887, 4897 and 4920, in preference to the one-year period of Section 4894.

In that decision, referring to the two-year rule of Section 4886, this Court used the language emphasized on page 11 of petitioner's brief—

> "* * * and no distinction is made between an original and a later or divisional application, with respect to this filing right."

That language was, however, used merely to say that the presumptive period of equitable laches in all patent prosecution is the two-year period of Sections 4886, 4887, 4897 and 4920, rather than the one year period (now six months) provided by Sec. 4894 for the filing of amendments.

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*The pertinent part of R. S., Sec. 4894, was at that time as follows:

> *"Time of completing application; applications regarded abandoned.* All applications for patents shall be completed and prepared for examination within one year after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within *one* year after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable."

In *American, etc., Co.* vs. *Prosperity Co., Inc.,* 295 Fed., 819 (C. C. A., 2), decided January 25, 1924, there was a motion to dismiss the bill on the ground that it did not allege that more than two years prior to the date of filing the *divisional application* on which the patent issued, the invention had not been in public use or on sale in this country and had not been patented or described in any printed publication in this or any foreign country. The motion was granted by the District Court (292 Fed., 144), but that decision was reversed by the Court of Appeals on the ground that a divisional application, in the absence of laches, estoppel, or intervening rights, relates back to the original from which it was carved and will be regarded as having the filing date and priorities of that original (295 Fed., 823).

In support of the motion, it was urged that the *Chapman case* in this Court laid down a peremptory rule that a divisional application must be filed within two years after any prior public use or prior publication or patenting. But the Court said (295 Fed., 821):

"We feel assured that no such rule exists."

In *Webster, etc., Co.* vs. *Splitdorf, etc., Co.,* 264 U. S., 463, decided April 7, 1924, claims 7 and 8 of the patent were held void because of laches in presenting them to the patent office. The claims were presented by an amendment to a divisional application eight years and four months after the filing of the original application, five years after the date of the patent to Podlesak disclosing the subject-matter, and three years after the commencement of the suit. There was doubt whether they were not so materially enlarged as to preclude their allowance in the original application, and there was evidence which satisfied the Court that the patentee had not originally intended to assert the claims because he considered their subject-matter one merely of design and not of invention, and during all of the elapsed time the

patentee and his assignee simply stood by and awaited developments (264 U. S., 465). The Court pointed out that it was not a simple case of a division, citing *Bennet* vs. *Fowler,* 8 Wall., 445, 448, and *American Laundry Machine Co.* vs. *Prosperity Co., Inc.,* 295 Fed., 819, but was a case of unreasonable delay.

The decision of the lower Court (C. C. A., 7—283 Fed., 93) had rested primarily on *Chapman* vs. *Wintroath,* which plaintiff contended had been misunderstood and misapplied. This Court felt the question thus presented important, and one that should be authoritatively determined (p. 469). It pointed out that the lower Court had held that the effect of the decision in the *Chapman case* was to fix the period during which a divisional application must be filed at two years from the date of the issuance of the other patent, and this Court said (pp. 469-70):

> "But *Chapman* vs. *Wintroath* is not to be so narrowly construed. * * *"

And (pp. 470-71):

> "If this were all, it might justify the conclusion that a hard and fast time limit of two years is to be applied in every case of a divisional application. But a reading of the entire opinion demonstrates that this conclusion is erroneous."*

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*Petitioner's counsel (brief, p. 9) after pointing out that the divisional application on which the patent here in suit issued was filed "more than two years subsequent to the original allowance of the subject-matter thereof" says:

> "That is what is expressly prohibited by the provisions of Section 4897, R. S."

But Sec. 4897 does not relate at all to divisional applications. Divisional applications are not provided for by any statute. They have grown up as a convenience of Patent Office practice and are nothing more than a form of amendment (*Bennet* vs. *Fowler,* 8 Wall., 445, 448, and *American, etc., Co.* vs. *Prosperity Co., Inc.,* 295 Fed., 819, cited with approval by this Court in *Webster* vs. *Splitdorf*).

In *Diamond, etc., Co.* vs. *Bayer Co.*, 13 Fed. (2d), 337 (C. C. A., 8), decided May 7, 1926, the application had been forfeited and renewed under Sec. 4897. The patentee had published an article describing the invention prior to the forfeiture and more than two years prior to the date of the renewal. The Court held that the renewal application properly filed within two years under Sec. 4897 has the benefit of the original application, and the two-year period must be reckoned from the date of the original (13 Fed., [2d], 340). The Court discussed *Chapman* vs. *Wintroath* (p. 340) and *Webster* vs. *Splitdorf* (p. 339), and pointed out that neither of them is in point.

In *Wagenhorst* vs. *Hydraulic, etc., Co.*, 27 Fed. (2d), 27 (C. C. A., 6), decided June 20, 1928, the original application was filed in April, 1921. In November, 1923, the patentee learned that there was commercial demand for the specific form disclosed in the original application, but covered only generically, if at all, in the original claims. He thereupon filed a divisional application containing specific claims to this particular form. The Court of Appeals held that the divisional application was not different from an amendment, that it has the benefit of the original filing date, and that there had been no such delay as to invalidate the claims. The Court pointed out (footnote, p. 28) that characterizing a division as an amendment is not inconsistent with *Chapman* vs. *Wintroath*, and said of that case (p. 29):

> "The opinion has been sometimes thought to indicate that the deadly two-year period begins to run from the time of filing the original application; but not only does a careful reading show that this is not said, but it is plain that, if such were the rule, the decision of the case must have gone the other way, for more than two years had expired after the orig-

inal application was filed before the date of the divisional one."

The Court also discussed *Webster* vs. *Splitdorf* and said (p. 29):

> "The summation at the end of the opinion says that the two-year limit under discussion applies to divisional applications. No doubt it does; but this is not to say that it applies to them in any other or different way than it would apply to a parent application, where the right to make claims has been lost by laches; the fact that they appear in a so-called divisional application, later filed, does not help them. From the recitals and reasoning of the opinion, we are unable to see that the fact that the amendment of 1918 was presented in a divisional application, instead of an original application, was of any importance to the result reached."

In *Dwight & Lloyd, etc., Co.* vs. *Greenawalt*, 27 Fed. (2d), 823 (C. C. A., 2), decided August 20, 1928, the patent (No. 1,433,350, at p. 830) was issued under the following circumstances: The original application was allowed on March 14, 1908. It was renewed, within the two-year period, by the filing of two applications, the first a divisional application filed February 4, 1910, and the second, a renewal of the parent application filed February 17, 1910. The divisional application was itself allowed on May 26, 1911, but was forfeited and again renewed on April 26, 1912, over four years after the allowance of the original application on March 14, 1908. Applying the rule in *Weston, etc., Co.* vs. *Empire, etc., Co.*, the Court held the patent void under Sec. 4897 because it was based on a second renewal filed more than two years after the first allowance.

Plaintiff's contention was that the divisional application should be treated as an original application, and so freed from the time limit of Sec. 4897 under which the original application rested. But the Court said that the divisional application should be treated as a continuation of the original application, thereby bringing the case directly within the rule in *Weston* vs. *Empire.* The whole effect of the decision was that applicant cannot escape the time limit put on renewal applications under Sec. 4897 by presenting the renewed application, or any part of it, as a division.

So far as any defense under Sec. 4897 is concerned, the *Dwight & Lloyd case* has no bearing on the present discussion any more than has the decision in *Weston* vs. *Empire,* because in the instant case the renewal was effected within the statutory period and there was only one renewal.

On the other hand, the decision in the *Dwight & Lloyd case* makes it very clear that a division which is not affected by laches and contains no new matter has under all circumstances the status of the original application. The Court said (p. 831):

> "It is now settled law, in spite of any doubts that may have been cast upon it by certain observations in Chapman vs. Wintroath, 252 U. S., 126, 40 S. Ct., 234, 64 L. Ed., 491, that a divisional application is no more than an amendment in the parent application, at least unless 'new matter' be introduced in the specification, which, whatever latitude it gives, was not the case here. Webster vs. Splitdorf, 264 U. S., 463, 44 S. Ct., 342, 68 L. Ed., 792; American Co. vs. Prosperity Co., 295 F., 819 (C. C. A., 2); Westinghouse vs. Jeffrey, 22 F. (2d), 277 (C. C. A., 2);

Wagenhorst vs. Hydraulic Co. (C. C. A., 6), 27 F. (2d), 27."

So in the present case, the divisional application which was promptly filed after the unchallenged renewal, and contains no new matter, has the valid status of the renewed application.

The Court will not be misled, we suppose, by the somewhat extraordinary suggestion of petitioner's counsel (Brief, p. 10) that the effect of the *Dwight & Lloyd* decision was to hold that all divisional applications are renewal applications. In that case the divisional application, to which the Court referred in the words emphasized in petitioner's brief (p. 10), was in fact a renewal of part of the subject matter of the original application, having been filed before the renewal of the parent application. In the instant case the renewal of the parent application was filed before the two-year period and before the division was made.

The discussion of this defense under Sec. 4897 slides off, in petitioner's brief (p. 12), into an assertion that in the divisional application Hopkins "attempted to expand the divisional patent beyond what was originally intended to be granted by the claims which were allowed in the parent application." No such defense is pleaded in the answer nor was any such defense urged before the lower Court. The fact is that from the very beginning Hopkins claimed the very subject-matter of the divisional application—the sound regenerator *per se* (see original claims 15-20, Tr., 343-345, and A. F. W., 1*)—and the claims allowed in the original application (claims 25, 26 and 27) were, as petitioner's counsel points out, copied

*The file wrappers are so hard to follow that we have extracted from them and printed separately the file wrapper history so far as it pertains to the subject-matter in issue. See pamphlet "Abbreviated File Wrapper History Including All that Pertains to the Subject-Matter in Issue," referred to hereinafter as A. F. W.

into the divisional application. Indeed, it is upon the fact that these very allowed claims became the subject-matter of the divisional application that petitioner's counsel bases his argument of invalidity under Sec. 4897.

Remarks on Petitioner's Brief.

Since the only real difference* between petitioner's loudspeakers and the structural embodiment of the invention disclosed in the patent is the change in the rim, it follows that **the only points in petitioner's brief that can have significance, so far as infringement is concerned, are those based on this difference in the rim.**

These points are that the rim in petitioner's structures (1) does not in itself produce sound, (2) does not support the cone, and (3) is not to be included in measuring the whole diameter of the tympanum.

1. *Petitioner's Point That the Rim in Petitioner's Loudspeakers Does Not Produce Sound.*

As a matter of fact this point is trifling, and as a matter of law it is without significance, as we are assured by a simple process of reasoning and by many pertinent decisions of this Court.

The facts are as follows: Petitioner's expert Dr. Miller admitted (Tr., 130-131 and 143) that the cloth rim in petitioner's structure yields so as to permit the bodily movement of the cone, and petitioner does not attempt to deny that the cloth rim is effective to prevent that excessive deformation (weaving or fluttering) at the edge of the cone that if unrestrained would cause blasting (see Miller, Tr., 50 and Farrand, Tr., 167). This is the

*The trifling truncation of the cone in the defendant's structure (see *post*, p. 40) is not a real difference. The structure remains none the less a cone.

functional purpose and the cooperative relationship of the rim to the other elements of the patented combination.

But Dr. Miller testified (Tr., 42 and 43) that the cloth rim is not of vibratile material capable of giving off sound.* Elaborating this he said (Tr., 143):

> "When I said it was not effective in the acoustical sense I meant that the cloth rim itself produces no effective sound. I think it produces a sound that would be inaudible and would have nothing to do with what we hear from it.
>
> As to what I meant when I said it did produce some sound—when I spoke in that way I meant that sound would be any kind of a wave motion in the air of any sort, even a minute sound or a confused sort of a sound. I did not say that the rim did produce any sound.
>
> The point of my assertion is that the cloth rim of the Fada cone is not made of a vibratile material."

That the sound produced by the paper rim of the structural embodiment disclosed in the patent is in itself of trifling amount is shown by the testimony of respondent's expert, Mr. Farrand, who said (Tr., 192-193):

> "As to whether or not, in a cone structure made with a paper rim such as Plaintiff's Exhibit 31, that the paper rim gives off sound waves, I believe that any body by vibrating, if the body is capable of re-

*The pillulous smallness of this distinction is shown by his testimony (Tr., 67) where he distinguishes the cloth rim from a rim of gold beater's skin (Elfering patent) which he says is not porous and has vibrations whereas the petitioner's cloth rim is porous; by his testimony (Tr., 107) that if the rim were made of cork (English patent) it would have some, although very little, acoustic effect; and by his testimony (Tr., 108) that if the rim were made of rubber it would have a different acoustical effect from the material of the cone, depending upon the character of the rubber.

> flecting sound waves, will give off sound waves and paper is no exception to that. The paper in that particular device, Plaintiff's Exhibit 31, contributes in a very small degree to the production of sound and at the higher frequencies contributes much less."

As a matter of law, petitioner's argument on this point, as on all the other points based upon the change in the rim, is fundamentally unsound because it rests upon an attempt to differentiate the patented combination from the infringing combination by directing attention to the individual mode of operation of different forms of rim, disregarding the admitted cooperative relation of the rim to the other elements of the combination.

That other forms of rim, which retain this functional relationship to the other elements of the combination, have in themselves other individual characteristics is beside the point. Infringement is to be determined by considering the cooperative relation of the elements of the patented combination to one another and by inquiring whether the accused device has the same number of elements obeying the same law of cooperation. That is the rule established by this Court in *Mason* vs. *Graham*, 23 Wall., 261, repeatedly applied since that time, and quite recently applied in *Temco* vs. *Apco*, 275 U. S., 319. It is expressed by Mr. Robinson in his work on the law of patents as follows (paragraph 246, p. 337, Vol. 1):

> "It [the doctrine of equivalents] does not indicate identity either in essential character or individual function, but merely the ability to produce the same effects when brought into connection with the other elements in the invention. It is in this sense that the word is used in speaking of the 'Doctrine of Equivalents.'"

And again (p. 339, paragraph 249):

> "Hence it is evident that similarity in individual character does not create, nor does diversity in individual character destroy, equivalence between such acts and substances as are thus capable of substitution for each other. However unlike in name, shape, size, capacity, proportions, arrangement, or material they may appear to be, when studied only in connection with each other, if when brought into their position in the art or instrument their interchangeability is manifest, these individual variations become of no importance. Equivalence resides in use, not in intrinsic attributes; and similarity of use alone is necessary to make one act or substance the equivalent of another."

In *Mason* vs. *Graham* the patented combination, a picker staff motion in looms, involved as one element a flexible connection between the rocker of the picker staff and the bed on which it rocked. The connection in the structural embodiment of the patent was quite different from the infringing connection. This Court could not have arrived at a holding of infringement if it had directed its attention to the individual character of that element.

In *Temco* vs. *Apco*, 275 U. S., 319, the flexible connection between the leaf spring and the axle of an automobile as used by defendant was very different from, and a definite improvement upon, the disclosure of the patent, but it was an infringement nevertheless. This Court at page 325 discussed the individual differences between that particular element of the combination as disclosed in the patent and as used in defendant's combination, but pointed out that infringement was not avoided because the two combinations operated in the same manner and produced the same result and because the function of the changed element in defendant's combination

was the same as the function of the like element in the patented combination, notwithstanding the differences in their individual characters when studied only in connection with each other.

Respondent's position therefore is that this point is unsound in law and insignificant in fact.

2. *Petitioner's Assertion That the Cone in Petitioner's Structure Is Not Supported by the Rim but by Three Springs at Its Center* (Brief, pp. 17-18 and 21).

On this point, petitioner's evidence does not support its assertions. Counsel refers to the testimony of Dr. Miller at pages 48-50 of the Transcript. Dr. Miller at first asserted that petitioner's cone is supported and restrained just in the degree required for its movement in the production of sound by means of a spring arrangement consisting of three arms attached to the vertex of the cone. But he added (p. 49) that movement of the cone exerts a tension on the rim, and (p. 50) that the rim—

> "* * * serves to hold the paper cone against the force of gravity from such sagging as might take place on account of the flexibility of the central springs."

On cross examination (Tr., 143) he admitted that when defendant's cone is separated from its actuating unit, including the centering springs, the cloth rim supports the cone; that when the cone is moved by pressure from its neutral position the cloth rim returns it to its neutral position; and that in the operation of the device, the rim yields to permit the movement of the cone. On re-direct examination (Tr., 145), he said that **in petitioner's device the cloth rim is one of the two forces that combine to maintain the cone in its neutral position and restore it to its neutral position when it is moved therefrom,** the other force being the spring arms.

That being the fact, the rule applied by this Court in *Temco* vs. *Apco* (*ante*, pp. 19-21) is also determinative of this point.

3. *Petitioner's Interpretation of the Word "Tympanum" as Used in the Patent Claims* (Brief, pp. 18-29).

By a process of reasoning that seems to us entirely devoid of reality, petitioner's counsel translates the change in rim material, which is the only real difference between petitioner's structures and the structural embodiment disclosed in the patent, into an asserted departure (even in the larger of petitioner's loudspeakers) from the dimensions recommended in the patent.

This argument seems to us entirely unreal. We do not think anyone could really doubt that in petitioner's device the rim is part of such a tympanum as is referred to in the claims.* Its unreality is evidenced, we think, by the extraordinary conclusions deduced from it in petitioner's brief.

Counsel agrees with us that in the patent claims the word "tympanum" is used to define the cone plus the rim. Then counsel asserts that because the whole area of the Hopkins tympanum—the rim as well as the cone—is the "sound regenerator" (brief, p. 20), the word "tympanum" in the claims must be taken to mean the sound reproducing element; that the cloth rim does not reproduce sound; and that consequently the word "tympanum" as applied to defendant's structure must mean the cone alone, not the cone plus the rim.

From the proposition counsel deduces that in petitioner's structure the tympanum (which is now taken to mean the cone alone) is not "rigidly supported at its periphery," notwithstanding the fact that the peripheral

*See Judge Galston's straightforward discussion of the same argument in the *Colonial case* (Pamphlet, pp. 115, et seq.).

edge of the flexible rim is rigidly supported in the metal frame as in the patent. Counsel says (brief, p. 21):

> "Instead, it is *movably* connected to the sound absorptive porous cloth ring. It would not operate successfully if it *was* rigidly supported at its periphery." (Emphasis theirs.)

It is quite true that these cones would not operate successfully if they were rigidly supported at the periphery (Tr., 158). It was for that reason that Hopkins introduced the flexible rim between the cone and the rigid frame. It seems to us that an argument which leads to the conclusion that defendant avoids infringement by using the operative three-element combination of Hopkins, instead of an inoperative two-element combination in which the cone would be rigidly supported at its periphery, destroys itself.

Again, counsel uses his peculiar interpretation of the word "tympanum" upon which to base the assertion that the tympanum even in petitioner's larger device does not exceed nine inches in diameter, although it is apparent that the elements of the structure within the encircling frame (the cone plus the rim) exceed nine inches in diameter, as in the patent.

Further, this interpretation of the word "tympanum" leads petitioner's counsel to assert (p. 25) that the encircling frame in petitioner's structure is not a support for the tympanum, although it obviously is such a support in the very sense of the Hopkins patent—a rigid support coupled to the cone by an interposed flexible rim.*

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*Incidentally, counsel here erroneously asserts that the aperture in the metallic supporting rings of petitioner's larger structure is only 8¼ inches in diameter, referring to dimension *g* on the drawing (Tr., 451). But that dimension *g* is not the dimension of the aperture in the supporting frame. The dimension of the aperture in the supporting frame is the dimension *a*, which is 9½ inches.

The Decision of the Third Circuit Court of Appeals.

Petitioner's counsel undertakes (Brief, pp. 40-49) to "convince this Court that the Third Circuit Court of Appeals was led into four fundamental errors of fact on which it predicated its decision" in the *Brandes case*. We shall discuss them under the four headings applied in petitioner's brief.

1. Blasting (Brief, pp. 41-44).

(a) Counsel says that the Court's understanding of the mode of operation of Hopkins' device is scientifically erroneous, especially as expressed in the words,

> "As we understand the action of the cone in free air, waves of different frequency are shed or emitted from the cone at various zones; that is to say, all the high frequency waves pass off into the open air near the apex of the cone, and as the waves become of lower frequency they will not pass off except from the farther out edges of the cone."

This is the highly valuable and unforeseeable advantage of Hopkins' properly mounted light stiff paper cone of adequate area—that it adapts itself to sound vibrations of all important frequencies—to which we referred in a footnote on page 11 of the *Rola* brief. It is a very interesting phenomenon inherent in the operation of Hopkins' three-element structure. It has proved somewhat difficult to explain, and **we think it would be quite safe for any Court to rest its decision on structural aspects alone, whether or not it achieved a correct understanding of this phenomenon.** But that the Judge who wrote the opinion for the Third Circuit Court of Appeals correctly understood it we feel sure.

It was testified to by Mr. Hopkins and by Mr. Farrand in the *Brandes* record and that testimony was repeated

in different words, but to the same effect, in the record here. In fact, in the instant case, it was finally confirmed by the testimony of petitioner's expert, Dr. Miller, notwithstanding his criticism* at page 99 of the record, to which counsel refers (Brief, p. 42).

Mr. Hopkins testified (Tr., 279-280):

> "All of the energy is applied at the apex. It must flow to the outer edge and as the energy flows it is really a bend or wave in the cone running from the apex down to the edge. It goes in a wave and there is a time element in it.
>
> Because it goes in a wave and its energy is being damped off all the time by the energy flowing down to the edge, because it goes in a wave, it can let off any amount of energy that happens to be there. If you have a very high vibration it will be damped off right near the apex. It does not need much area to damp that off, and the energy is expired.
>
> The energy in the bass notes requires a large area. That continues in the paper in the form of a wave down towards the edge and gets the movement of the whole cone encountered so that it is damped off into a large area there."

And (Tr., 281):

> "RXQ313. You stated that using this cone you obtained unexpected results. What was unexpected about it?

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*This criticism is not so much a denial that the phenomenon exists, as a criticism of Judge Buffington's manner of expressing himself in the words—

> "as the waves become of lower frequency they will not pass off except from the farther out edges of the cone."

If Judge Buffington had said—

> "as the waves become of lower frequency they are emitted from greater areas which finally extend to the very edges of the cone"

the criticism could not be made.

A. It was far more efficient over the whole range especially the lower end of the range than I believed we had a right to expect from the structure.

RXQ314. Then its efficiency over the audible range is the unexpected result that you obtained?

A. Yes."

Mr. Farrand testified (Tr., 181):

"The wave in a cone as initiated by the vibration applied in an axial direction and the area near the source, that is nearest the apex, is principally active in producing the sound wave. At the higher frequencies, this area is very small. At 5,000 cycles it may only be an inch in diameter. As the frequency is decreased, this area becomes larger and larger until at the lower frequencies of 50 to 100 cycles it encompasses the entire cone structure itself."

Dr. Miller testified (Tr., 138):

"When you impress these vibrations on the apex of one of these cones, the apex starts to move forward, compressing the air in front of it.

The paper of the cone, having some flexibility, bends somewhat, so that as you recede toward the edge of the cone the paper towards the edge does not follow in exactly the same time as the apex moves; it lags behind it."

And (Tr., 139):

"I mean that the amount of flexure and the point or points at which flexure occurs would depend upon the frequency of the vibration and its amplitude."

The only thing that petitioner's counsel advances against this is the assertion (p. 42).:

> "As is visibly demonstrated by sand patterns of the vibratile member of both Lektophone* loudspeakers and Fada loudspeakers, it is apparent that all frequencies, i. e., all tones emanate from *all* portions of the vibratile material throughout its area (Rec., p. 557; see also Petitioner's physical exhibits)." (Emphasis his.)

Counsel refers to no testimony to support this assertion, and we do not believe that it will be "apparent" to this Court, on mere examination of these photographs, how the tones emanate from the loudspeakers.

But the testimony shows that this advantageous phenomenon present in the Hopkins loudspeaker and also in the petitioner's loudspeakers **is clearly evidenced by the sand patterns.** The sand patterns to which counsel refers are produced by dusting a light powder onto the surface of a cone vibrated at a chosen frequency. The powder arranges itself so as to frame (not very clearly but sufficiently to be significant to those skilled in such matters) the areas of greatest vibration of the cone's surface. The powder forms what is known as Chaladni figures by settling in the regions of little or no vibration (nodes) so framing the areas of maximum vibration (loops). The sand patterns do not show the bodily movement of the cone, but only the flexing of the different portions of the cone as it accommodates itself to the frequency impressed upon it. **And in showing this they confirm, as petitioner's expert Dr. Miller admitted, the characteristic mode of operation of the Hopkins cone to**

*The word "Lektophone" loudspeaker is here used to mean the Hopkins loudspeaker so that counsel is here identifying the mode of operation of petitioner's loudspeaker with the mode of operation of the patented loudspeaker. Whatever the correct explanation of the phenomenon may be, it is agreed that what the sand patterns show to be true of petitioner's loudspeaker they also show to be true of the loudspeaker specifically disclosed in the patent.

which the Third Circuit Court of Appeals refers. Dr. Miller said (Tr., 139):

> "These radial waves giving rise to circular nodes that are shown here in the sand patterns are the reflection of that flexing of the cone."*

These sand patterns not only show the circular nodes which reflect the flexing of the cone to accommodate itself to the particular frequency impressed, which is the characteristic advantage of the structure to which the Third Circuit Court of Appeals referred, but they also show the radial nodes caused by the detrimental or parasitic waves which tend to produce blasting, and will produce blasting unless the deformation of the peripheral edge of the cone is restrained by a flexible rim.

This was explained by Mr. Farrand in connection with his charts (Tr., 173-178, Pltf.'s Exs. 35-36; Tr., 457 and 459), and he summarized as follows (Tr., 178-9):

> "The conclusions I draw from this chart are that they show the effect of adding the plane peripheral rim to a conical diaphragm restricting the parasitic wave to such a degree that the cone may be properly loaded with a useful vibration."

He also said (Tr., 179):

> "The radial wave is essential to the reproduction of the sounds of an orchestra. The circular node is incidental to this.
>
> The radial node, or at least the waves incident to the formation of radial nodes, are not essential. They are not only not essential, they are detrimental."

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*And see the full discussion of the subject by respondent's expert Farrand (Tr., 173-178) with reference to his charts (Exhibits 35 and 36, Tr., 457 and 459).

He demonstrated this (Tr., 167) by vibrating simultaneously Defendant's Exhibit O, one of petitioner's loudspeakers, and a similar loudspeaker with the flexible rim removed. Petitioner's loudspeaker played without blasting, while the device with the rim removed blasted. The actual deformation of the edge of the cone by the parasitic waves running around the cone and building up radial nodes and loops until finally the elastic limit of the paper is exceeded and blasting occurs, was shown both audibly and visibly, and he said (Tr., 158):

> "With no restraint on the edge of the cone at all, you would expect to have such a freedom that increased efficiency would result but practically the edge would lack support and the periphery of the conical portion would deform much in the same manner as a bell deforms when hit with a blow at its periphery.
>
> This deforming vibration, a sort of a parasitic vibration, builds up and gives rise to paper rattle or blasting."

That blasting was the defect of the Starling & Cole light paper cone without support at its edge. Hopkins cured this by adding his rigid frame with the interposed flexible rim. As he says (Tr., 278):

> "* * * it was that thing working with that mode of operation that we combined with a support and a means for suppressing some of its objectionable features."

(b) Petitioner's counsel further criticizes (Brief, pp. 42-43) the decision of the Third Circuit Court of Appeals with respect to the finding of fact which that court expressed in the words:

> "Now it seems to us that Hopkins was the first to point out that this blasting effect caused by the local vibrations at the edge of the cone would be prevented and the cone held restricted to vibrations as a whole and the weaving prevented by the expedient of using a rigid frame and making a liaison between the edges of the cone and the clamp of the rigid frame by a flexible yielding liaison belt which vented and thereby prevented the obnoxious fluttering of a cone's edges not rigidly held."

Insisting that the "phenomenon of blasting is not mentioned or even remotely suggested in the file history of the Hopkins patent or in the patent itself,"* counsel nevertheless is unable to deny that Hopkins was the first to apply to a paper cone of proper size acting on free air, the expedient of using a rigid frame and making a liaison between the edges of the cone and the clamp of the rigid frame by a flexible yielding liaison belt whereby the cone is held restricted to vibration as a whole and the obnoxious weaving or fluttering of a cone's edges not rigidly held is prevented.

Since the patentee was the first to produce the three-element mechanical combination consisting of a conical-

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*Petitioner's counsel for some reason, which we have never been able to understand, insists here, as he has insisted before, that this matter of blasting was not mentioned until "after two trials [the *Sylo* trial and the *Western Electric* trial] had been had in litigations involving the patents." The subject was not mentioned in the *Sylo case* because at the time of that trial the Starling & Cole publication was not relied upon by defendant. That publication came in for the first time in the *Western Electric case* and there the blasting effect inherent in it, which was overcome by Hopkins when he coupled the cone by a flexible rim to a rigid frame, was emphasized; as clearly appears from the decision of Judge Thacher in the *Western Electric case*, where he said of the Starling & Cole device (pamphlet, p. 28):

> "Volume was lacking, and when to increase its volume this device was driven with increased power unwelcome buzzing and rattling sounds were heard, apparently caused by the shaking of the unsupported edges of the extremely light paper cone."

shaped paper device of proper size coupled by a flexible rim to a rigid frame, used in free air, whereby this "obnoxious fluttering of a cone's edges" was overcome, and since he adequately disclosed this combination in his patent, it makes no difference what he may have said or left unsaid about the advantages inherent in the structure.*

Counsel refers, it is true, to the prior art patents to Stroh and to Lumiere (Brief, pp. 43-44), but when petitioner's expert was asked (Tr., 142-143) whether or not he could find in the patents and publications of the prior art "this mechanical combination, a conical-shaped paper device impressing sound directly upon the air, that is, without the interposition of a sound-box and horn provided with flexible edges and coupled to a rigid frame," he could think only of the patent to English, which is one of the small sound-box and horn combination patents. And he immediately admitted that this is not a direct-acting loudspeaker, but is a sound-box and horn device. As to the patentability of Hopkins direct-acting loudspeaker over the prior art sound-box and horn combinations, as to which the Third Circuit Court of Appeals said (Pamphlet, p. 57): "these threw no light upon Hopkins' problem," we refer this Court to the discussion in our brief in the *Rola case* (pp. 30-33 and 38), and particularly to the discussion by Campbell, D. J., in the *Sylo case*, and by Thacher, D. J., in the *Western Electric* case.

(c) Discussing further the decision of the Third Circuit Court of Appeals, now on the question of infringement, petitioner's counsel makes (Brief, p. 34) quite unwarranted assumptions to the effect that it was not

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*"A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities he is entitled to the rank and protection of an inventor" (*Diamond, etc., Co.* vs. *Consolidated, etc., Co.*, 220 U. S., 428, at pp. 435-436, and cases cited).

called to the attention of the Third Circuit Court in the *Brandes case* that the smaller of the plaintiff's loudspeakers had a whole diameter less than 9 inches and that the Court in arriving at its conclusion overlooked that circumstance. The drawing found opposite page 60 of the pamphlet of "Lektophone Litigation, Opinions and Decrees," was before the Third Circuit Court of Appeals in the *Brandes case,* and it illustrates the circular cone with flexible rim, the whole diameter of the cone plus the rim being 8⅞ inches as indicated on the drawing. The defense that this device because of its dimensions was outside of the patent was pressed upon the Court in brief and argument, and was the subject of expert testimony. That appears from the record in the *Brandes case* which was before the District Court in this case. Judge Morris doubtless satisfied himself of that before he held that his decision in the instant case was dictated by the decision of the Court of Appeals in the *Brandes case* (Opinion, Tr., 4).

The particular reference to the "elongated oval board" in the opinion of the Third Circuit Court of Appeals in the *Brandes case* arose from the fact that defendant there contended that its larger elongated oval sounding board was not a cone.

2. Lumiere Reproducer Not Commercial (Brief, pp. 44-45).

The second asserted error of fact in the decision of the Third Circuit Court of Appeals has to do with the commercial use of the Lumiere loudspeaker. As to it counsel says that the Court "was in error" as to the facts, probably due to the insufficiencies of the record before it." **The fact is that the evidence in this record as to the sale of these Lumiere loudspeakers is precisely the same as the evidence before the Court of Appeals with the single exception, favorable to plaintiff,**

that at the time of the trial of the Brandes case it did not appear whether the Victor Company had definitely discontinued the manufacture and sale of these devices or not. Subsequently it appeared that none were manufactured or sold after the year 1926. Thereupon the testimony as to the extent of these sales, which was taken in the *Western Electric case* and stipulated into the *Brandes case*, was again stipulated into this case with the addition to the stipulation of the words "and that none have been manufactured or sold except in the years 1925 and 1926" (Tr., 464).

3. Victor Company Using Loudspeakers Licensed Under the Hopkins Patent (Brief, pp. 45-47).

Here petitioner's counsel explains that there is evidence in this case as to why the Victor Company chose to use the loudspeakers licensed under the Hopkins patent manufactured by the General Electric Company. Whatever that reason may have been, the fact remains that the manufacture of the Lumiere loudspeaker which was begun by the Victor Company in 1925 was abandoned in 1926.

4. The Bodily Movement of the Hopkins Cone (Brief, p. 48).

The fourth asserted error of fact in the opinion of the Third Circuit Court of Appeals is said to be "that the Court was of the opinion that the Hopkins cone moved *bodily.*" **The undisputed fact is that the Hopkins cone does move bodily.** Counsel proceeds to assert that "the cone frustums of the *Fada loudspeakers do not move bodily*" (emphasis his) and consequently do not infringe. It is to be noticed that counsel does not refer to any part of the record to support that assertion.

The fact is that petitioner's counsel attempted to get petitioner's expert, Dr. Miller, to make the assertion that the cone in the petitioner's structures does not move bodily but Dr. Miller declined to do so. Testimony on the subject, reduced to narrative form, is as follows (Tr., 130-131):

> "It is not a fact that no bodily movement takes place in the Fada cone structure in operation. I should say that some bodily movement occurs. Bodily movement with the suppression or elimination of wave movement does not take place in the defendant's structure* as it is used in the reproduction of speech and music or as it is used as a radio loud speaker.
>
> CROSS-EXAMINATION.
>
> What I mean to say, is that the defendant's cone does move bodily, but the bodily movement is accompanied by wave movements in the material of the cone, wave motions which are essential to the reproduction of the sound and music."

Why counsel should permit himself to make an assertion that the testimony of his own witness so definitely repudiates, we cannot understand.

Notwithstanding the fact that his own witness denied the assertion that the cone frustums of the Fada loudspeaker do not move bodily, counsel, without referring to any supporting testimony, says that his assertion "is established by the sand patterns" (Deft.'s Exhibits 31 to 37).

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*It is equally true that the bodily movement of the Hopkins tympanum does not take place "with the suppression or elimination of wave movement." In none of these structures is the troublesome wave movement absolutely suppressed (Tr., 178), but whenever the cone is coupled by a flexible rim to the rigid frame the troublesome wave movements are sufficiently suppressed to impress large area sound waves directly on the air without blasting.

These "sand patterns," as we have seen (ante, p. 27) **show only the relative movement of one part of the cone with respect to another part.** They cannot any more show the presence or absence of a bodily movement of the cone than a photograph of the waves on the surface of the sea can show the rising and falling of the tide. In spite of counsel's assertion, that fact cannot be denied. It was expressly admitted by petitioner's expert, Dr. Miller, who said (Tr., 148):

> "Assuming that the cone is moving in a rectilinear movement back and forth, but at the same time is vibrating or fluttering with these movements that are shown in the sand patterns, the sand pattern would not show directly whether there was a rectilinear movement, that is a movement of translation of the cone as a whole or not."

Other Points in Defendant's Brief as to Infringement.

Other contentions, on the subject of infringement, are advanced in petitioner's brief, but we think they have no reality because the only real difference in the structures is the difference in the rim. Indeed, we feel that these additional points are not worthy of the serious attention of this Court. While we do not feel justified in ignoring them, we do think that the Court might well feel justified in doing so.

Petitioner's Contention That Hopkins Patented a Sound Regenerator for Phonographs, Not for Radio (Brief, pp. 13-16).

Petitioner's counsel in his brief says (pp. 13-16) that the Hopkins patent is directed to an acoustic device "*for reproducing recorded sound from a disc phonograph rec-*

ord"* (p. 16, emphasis his), whereas petitioner's radio loudspeaker is said to be "*used in an art entirely foreign to the phonograph art*" (p. 16, emphasis his).

The Hopkins simple three-element cone type loudspeaker invented years before the advent of radio has shown its worth by this: Born in the phonograph art and first put into commercial use therein, it encountered the tremendous slump in that industry caused by the advent of radio; but it persisted into the radio industry and almost completely excluded therefrom all other types of loudspeakers.

It is hard to tell from petitioner's brief what advantage, if any, petitioner is supposed to get from this circumstance that the invention was born in the phonograph art. The patented thing is a structure, not a use, and the patentee is entitled to all of the uses to which his invention may be put, whether he knew of them or not (*Roemer* vs. *Simon, et al.*, 91 U. S., 149, at p. 157).

Suggesting that the discussion will thereby be "simplified," counsel quotes from patent 1,271,527 where the patentee mentions the regeneration of sound directly from a phonograph record, ignoring the more comprehensive language of the divisional patent 1,271,529 here in suit, chosen to bring it into accord with the scope of the original claims. A single example will be sufficient

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*Counsel says (p. 16)—

> "Indeed, Hopkins admitted that he never contemplated its use in radio (XQ62, Rec., p. 228)."

What Hopkins testified is (Tr., 228, XQs60-62) that at the time he made his invention there was no such thing as radio, that he did not foresee the development of radio, and consequently never thought of using his device in radio unless using it for telephone purposes might be connected with that.

to illustrate this. Where patent 1,271,527 says (p. 1, lines 73 et seq., Tr., 437):

> "It is an object of the present invention to regenerate the recorded sounds directly from the record, without the interposition of a confined body of air and without the employment of a restrictive transformer, such as a horn."

The patent 1,271,529 here in suit says (p. 1, lines 67-73, Tr., 317):

> "It is the object of the present invention to regenerate the original sounds directly from the record *or other element subjected to the action of such sounds,* without interposition of a confined body of air and without the employment of a restrictive transformer, such as a horn." (Emphasis ours.)

Petitioner's Contention That the Rim and the Cone Must Be of One Piece of the Same Material (Brief, pp. 15-16; 17-18; 20; 24; 32-33).

Another point of petitioner's brief is that in the disclosure of the Hopkins patent the tympanum is "shaped from a single piece of material" (Brief, pp. 15-16; 17-18; 20; 24; 32-33). The fact is that Hopkins, when he made his invention, did not shape the paper tympanum from a single piece of material. He mounted a paper disk in the rigid annular frame, and then "glued the cone on to the flat part, and after the middle had been cut out we had a wonderful result" (Tr., 220).* Petitioner's counsel knew and understood this, as his cross examination of Hopkins expressly shows (Tr., 227, XQ53).

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*The whole of Mr. Hopkins' statement about the genesis of his invention (Tr., 217-220) is short and very pertinent and worthy of the Court's attention.

But even if it were true, as it is not, that in the Hopkins patent the tympanum is "shaped from a single piece of material," yet such a construction of the monopoly "which would limit these words to the exact mechanism described in the patent, would be so obviously unjust that no court could be expected to adopt it" (*Hobbs* vs. *Beach*, 180 U. S., 383, at p. 400).* The patent cannot be limited to making the rim of the same material as the cone unless that was the thing that distinguished Hopkins' invention from the prior art or unless the claims are expressly so limited to something less than Hopkins' real invention.

The facts are precisely the opposite of this. The prior art, smaller sound-box and horn diaphragms were in some cases shaped from one piece of material, and in other cases had rims made from a separate piece of more flexible material (see Rola brief, p. 30).** When this came to the patentee's attention during the prosecution of his application, he **carefully amended the claims to exclude all idea that his monopoly should be limited to a rim which was an annular plane peripheral extension of the cone** (Rola brief, pp. 42-43).

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*And see the *Paper Bag case* (210 U. S., 405, at pp. 418-419) and *United States* vs. *Anciens Etablissements* (224 U. S., 309, at p. 326).

**Whether petitioner's counsel is conscious of this we do not know, but in his discussion of these patents (Brief, pp. 35-37), there is no recognition of it. He erroneously says of the Elfering patent that it "shows a cone shaped out of one piece of vibratile sound reproducing material" whereas the Elfering patent shows a rim made of "gold beater's skin" (Tr., 521, line 65). He erroneously says that the Brown British patents "show a cone made of light vibratile sound reproducing material shaped out of one piece of material" whereas the fact is that the Brown British patents show a cone made of thin aluminum (Tr., 524, line 20) and the rim is a "thin ring of flexible material * * * of tissue paper, silk or other suitable material" (Brown British patent 29,833, Tr., 524, line 44 and 525, line 31), or "a ring of resilient material of extreme thinness,—considerably thinner than the diaphragm periphery itself" (Tr., 529, line 25) such as "glazed tissue paper one three-thousandths of an inch thick of thin collodion film" (Brown British patent 1157 of 1911, Tr., 530, line 25).

Petitioner's Contention That It Avoids Infringement by Putting Its Loudspeaker in a Cabinet (Brief, pp. 17, 29-32, 33).

On this point the Third Circuit Court of Appeals said (Pamphlet, p. 60):

> "Having thus appropriated in substance Hopkins' board and produced thereby the sounds desired, the defendant seeks to escape infringement by placing over the functioning structure an ornamental hood and thereby, as it contends, make the apparatus operate in confined air. The purpose of the hood to escape infringement by using an outward and visible form to escape an inner and duplicating substance is too clear to find lodgment in the minds of those who judge rights on the basis of substance rather than form."

The facts here are again contrary to the assertions of petitioner's counsel. Counsel says that petitioner's loudspeaker (Brief, p. 17):

> "is designed to be used, and is used in practice, within a resonance chamber or cabinet where the surrounding air is *confined* (Rec., pp. 53, 54). (Emphasis ours.)

The testimony cited not only does not say that the air is confined in petitioner's cabinet (as counsel now asserts), but explains that the cabinet is open at the front and back so that the air will not be confined. Petitioner's witness, Dr. Miller, says (Tr., 53):

> "There is this opening in front through a grill work here, but which is in effect a circular opening in [to] the interior. * * * and the removable rear part

of the cabinet, is perforated in such a way that it allows sound to come from the rear. * * *

There is no opening to the atmosphere in the top, bottom, or sides, other than the front and rear which I have mentioned."

The reference to confined air in the patent meant that there is an enclosure in which the air being operated on is surrounded by walls for a functional purpose, and by limiting his invention to "freely exposed to unconfined air" the patentee was distinguishing between a sound box construction in which the air confined in the sound box is violently vibrated to set up disturbances which are subsequently shaped by the transforming action of the horn into sound waves. This was quite clearly appreciated and was stated even in the decision of the Second Circuit Court of Appeals from which petitioner's counsel quotes on page 31 of his brief.

Petitioner's Point That Its Cone Is Truncated and the Patented Cone Is Not (Brief, pp. 17, 24-36).

Another one of petitioner's suggestions, which we would hardly think could be seriously advanced as a difference that avoids infringement, is that the cone in petitioner's loudspeaker is truncated and the patented cone is not. In some of these radio or telephone loudspeakers the cone is vibrated by a rod connected to the pivoted armature of an electromagnet, as in the Brandes loudspeaker (see drawings opposite p. 60 of the Pamphlet). In others the cone is vibrated by mounting a small cylindrical coil of wire at the apex of the cone and subjecting that coil to the variation of a magnetic field. This latter, so-called "dynamic" type of actuating means, is used by petitioner here (see drawing, Pltf.'s Ex. 5, Tr., 451, and Miller, Tr., 36 and 142). The attachment of the cylindrical form of the moving coil to the cone trun-

cates the cone, but, of course, without destroying the conical shape or altering the mode of operation of the patented combination in the slightest degree.

If this Court is disposed to give any consideration to the point at all, it should be careful not to be misled by what might appear to be an assertion at page 36 of petitioner's brief that the claims of the Hopkins patent were restricted, during the patent office proceedings, to a cone structure as differentiated from a truncated cone structure, or a frustum of a cone. Counsel quotes from an argument made by Hopkins with respect to a claim then numbered 15, which had been rejected on the patent to Kraemer. The claim under discussion included (Tr., 343, A. F. W., 1):

> "a cap of non-vibratile material rigidly secured to the apex of said conical portion of said tympanum."

The specification said (Tr., 336):

> "The cap M is applied to the tympanum to receive the shocks which are to be applied to the tympanum as a whole, and convey them to sufficient of the material of the tympanum to insure the movement of the tympanum as a whole."

The applicant pointed out, in the remarks quoted by petitioner's counsel at page 36 of his brief, that this element of the claim was not met by the small metal plate 16 secured in the Kraemer patent to the center of a flat surface at the top of Kraemer's truncated cone because (Tr., 361):

> "With a diaphragm of this kind, the center will yield and produce local disturbances."

This metal cap element of the combination is not included in any of the claims here sued on, and the re-

marks quoted by counsel are utterly irrelevant to the present discussion.

Petitioner's Contention That Its Structure Does Not Have the Cone Altitude of Claims 3, 6 and 7 of the Patent.

Another trivial point advanced by petitioner's counsel (Brief, p. 24) is that the altitude of the cone in petitioner's structures is not "substantially one-quarter of the diameter of its base," as recited in claims 3, 6 and 7. The patent specification on which these claims are based says (pat., p. 2, lines 94-96):

> "The altitude of the conical portion *l'* should be at least one-quarter of the diameter of its base."

Petitioner's expert agreed under cross examination (Tr., 131) that the altitude of the cone in defendant's structures is "at least one-quarter of the diameter of its base" and so "complies with the statement of the patent."

Petitioner's Contention That Claims 4 and 8 Are, in Fact, Limited to the Minimum Dimensions Expressly Stated in Claims 1, 2, 3, 5, 6 and 7, Irrespective of Whether or Not Those Dimensions Are Numerically Expressed in the Claims.

We have discussed this subject fully in our brief in the *Rola case*, where we have traced the true nature of the advance that Hopkins made over the prior art[1] and the true mode of operation of his new combination[2] and of defendant's equivalent structure[3]; and have shown

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[1] *Rola* brief, pages 21-36.

[2] *Rola* brief, pages 14-16.

[3] *Rola* brief, pages 18-21 and 63-65.

how the Rola loudspeaker, which corresponds in size to petitioner's smaller loudspeaker, is merely a colorable departure from the recommended dimensions of the patent. And we have pointed out above (*ante*, p. 6) that the larger of petitioner's loudspeakers does not even make that colorable departure from the disclosure.

We have also stated in that brief our position with respect to petitioner's contention that defendant's smaller structure is excluded from the monopoly by the disclosure of the specification and the patent office proceedings.*

Petitioner's counsel, in the instant case, supports the proposed limitation of the claims by the assertion that the literal extension of the whole diameter of the tympanum to nine inches is an essential of the invention, citing (pp. 25-28) the decision of the Second Circuit Court of Appeals in the *Sylo case* and the decision of Hickenlooper, D. J., in the *Crosley case* to reinforce the decision of Judge Bourquin and that of the Ninth Circuit Court of Appeals in the *Rola case*.

The Second Circuit Court of Appeals did not put any interpretation on the patent that would exclude petitioner's structures, as is evidenced, we think, by the fact that Galston, D. J., since that decision has in the *Colonial case* in the District Court in Brooklyn held the patent infringed by a larger loudspeaker precisely like petitioner's (see *post*, p. 51).

Judge Hickenlooper did not in the *Crosley case* put any interpretation on the patent that would exclude petitioner's structures. Indeed, he said (pamphlet, p. 71):

> "The loose rubber ring of Brandes may be such equivalent * * * *" (see *post*, p. 52).

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*Rola brief, pages 40-51.

Argumentatively counsel repeats again and again the assertion that (a) "a tympanum in excess of 9 inches in diameter is the *essential* characteristic of the Hopkins invention" (p. 28) and (b) "The patent states that this result can be secured *only* if a tympanum exceeding 9 inches in diameter is employed" (p. 28).

But neither of those assertions is true.

(a) The essential characteristic of the Hopkins invention is a light stiff paper cone, of sufficient area to directly create the sound waves in air without the interposition of a soundbox and horn, coupled by a flexible rim to a rigid frame; and

(b) what the patent states is that "If satisfactory regeneration of sounds * * * is to be had, the whole diameter of the tympanum * * * should exceed nine inches," although "it is, of course, possible to make some variation from the approximate sizes given without materially altering the result; but if the tympanum is constructed as shown in the drawing, any great variation from these proportions will be found to affect the character of the reproduction."

There is no doubt that size is of the essence of Hopkins' invention in its differentiation from the sound-box horn devices of the prior art. The diaphragms of those devices were of the order of magnitude of one inch in diameter.

After Hopkins, in his experimental work, had dispaired of producing a satisfactory loudspeaker of the sound-box and horn type, and after he had experimented with sounding-boards of the piano, guitar and zither type and found them too heavy (Tr., 218-219); he may, looking back upon his experimental work, be said to have thrown away the horn and opened up the sound-box to expose the diaphragm to unconfined air. But these small diaphragms would not, when exposed to unconfined air,

achieve his purpose because they reproduced effectively only the high frequency notes (Miller, Tr., 137 and 139; Farrand, Tr., 169-171 and 173; Hopkins, Tr., 231). He found by extended experiments that in order to get a reproduction of sound with the even balance that the art demands, the diaphragm had to be enlarged to the dimensions set forth in his specification, not rigidly as the essence of his invention but enlighteningly as the size necessary to get the proper quality of reproduction.

Throughout the prosecution of his application Hopkins repeated that in a loudspeaker acting directly on unconfined air, as distinguished from the sound-box and horn combination, **substantially** this size is necessary in order to get satisfactory results (see *Rola* brief, pp. 51-63), and the Patent Office Examiner said (A. F. W., 20):

> "The Examiner understands * * * that the base diameter must be substantially nine inches in order that satisfactory results can be obtained."

Although Hopkins included in some of his claims the literal limitation to nine inches, he insisted on other claims not so limited. **It could only have been in contemplation of possible equivalents that he insisted upon, and the Examiner allowed, the claims of broader phraseology.**

But even if the claims were all limited in terms as claims 1, 2, 3, 5, 6 and 7 are limited (and claims 4 and 8 are not) still we think the Court would find infringement* because petitioner has in fact paid the tribute of imitation to Hopkins' recommended size of the active conical sound-producing portion of the tympanum, and

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*Although in the instant case petitioner does actually employ a cone of the full area that Hopkins recommended yet the law is that it is not necessary that a defendant should employ the plaintiff's invention to as good advantage as he employed it or that the result should be the same in degree; but it must be the same in kind (*Winans* vs. *Denmead*, 15 How., 330, at p. 344; *Sewall* vs. *Jones*, 91 U. S., 171, at pp. 183-4; and *King Ax Co.* vs. *Hubbard*, C. C. A., 6, 97 Fed., 796).

has achieved an insignificant reduction of the whole diameter of the tympanum also in accordance with the principles of Hopkins' invention by making the narrower rim of more flexible material.

Petitioner has not used the small conical diaphragm of the sound-box and horn art, or anything like it. Its cone having a diameter of seven inches is forty-nine times as large as the customary size of cone used in the sound-box and horn combination, and it effectively acts upon unconfined air to directly create the sound waves without the interposition of a sound-box and horn.

Under the heading "The Limitation of Size" (Brief, pp. 38-40), counsel carries his argument to the assertion that:

> "the patent is wholly invalid because of his [Hopkins'] fraudulent misrepresentation as to the *essence* of his invention." (Emphasis his.)

To support this charge of fraudulent misrepresentation by the patentee, counsel quoted certain testimony given by the patentee in the *Western Electric* case and read to him in the instant case (Brief, pp. 38-39), and counsel says:

> "* * * he adopted it, with slight modification, in the present case."

The idea that counsel seek to convey by this is that the statement in the patent was inserted by the patentee, after the rejection of his original claim and as a prerequisite to the final allowance of the claims; that the limitation was a purely arbitrary one without real significance, and that for this reason the patent is invalid.

The fact is that what is said in the patent specification about size was in the specification when it was orig-

inally filed in 1913 (Tr., 333). The "slight modification" in Hopkins' testimony, as counsel characterize it, was a complete repudiation of the idea counsel seeks to convey (Tr., 245-246); and the minimum dimension of the cone recommended by Hopkins in his original specification is shown by this record, and by petitioner's adoption of it, to be in fact a minimum below which the high-frequency and the low-frequency sounds will not be reproduced in even balance.

When Mr. Hopkins was asked by petitioner's counsel why he included this statement as to size in the specification, he said (Tr., 238, XQ113):

> "* * * It was an earnest desire of ours to make a disclosure of the best type of device that we knew how to do at that time."

And (Tr., 242, XQ129):

> "Yes. I told you that below nine inches by careful experiment we found that the efficiency in the bass ranges was falling off and that we did not believe—that is, nine inches was a rather rough way of putting it—I mean it was a zone there of that size, and below that the basses were not reproduced in what we considered the full amplitude to match the rest of the sound gamut."*

When Hopkins tried to explain, in answer to a question from the Court, why a tympanum having a whole diameter not less than nine inches functions better in the reproduction of sound than one less than nine inches in diameter, he was stopped by petitioner's counsel (Tr., 241-242); but on re-direct examination the subject was resumed, and he said (Tr., 274, RDQ300):

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*And see Tr., 243, XQ136; Tr., 247, XQ155; Tr., 248, XQ156 and Tr., 220-221.

> "Unless you made it that—unless you made it that size, it would not play efficiently the proper quantity of bass to go with the other frequencies to complete the gamut."

And (Tr., 275, RDQ302):

> "* * * We had discovered by experiments that anything smaller than, roughly this minimum size of the structure that we gave in the specification, would not play the bass end of the sound spectrum of a musical range that we were after—"

and (Tr., 276, RDQ305):

> "It is the point where the effective combination of the bass waves becomes noticeable in falling off."

And at pages 282-283, he explained that the basses progressively fall off as the size is diminished and progressively increases as the size is enlarged. The size he recommended is critical only in the sense that below that size the balance of tones is not up to the quality that the art demands (Tr., 220 and 240).

That this balance of sound reproduction over the whole gamut is necessary, and that it has been the continuous effort of builders of such devices to attain it, is testified to by petitioner's expert, Miller (Tr., 132-133, and see respondent's expert, Farrand, Tr., 214).

Petitioner's Misleading Review of Previous Litigation (Brief, pp. 3-6).

Petitioner's discussion of previous litigation is so confused with irrelevant discussion of the "parent Hopkins patent" 1,271,527, not here involved, that it is hard to follow. Stripping it of this irrelevant matter

we find the discussion summarized in two assertions (p. 6):

(a) That the patent "has, either directly or by inference, been held to be invalid by the New Jersey, Ohio and California District Courts and the Ninth Circuit Court of Appeals."

The only Court that has ever held the patent invalid in this country or abroad is the District Court of New Jersey (*Bodine, D. J.*) which, in the *Brandes case*, held the patent directly anticipated by Lumiere. This was reversed by the Third Circuit Court of Appeals. The Ohio District Court (Hickenlooper, D. J.) expressly accepted the conclusions of validity of the two District Courts of New York and the Third Circuit Court of Appeals (Pamphlet, p. 62). The California District Court (*Bourquin, D. J.*) said (Pamphlet, p. 81):

> "the issue of validity need not be and is not determined."

The Ninth Circuit Court of Appeals (Pamphlet, p. 105) found it

> "unnecessary to pass upon the validity of the patent"

(b) That the patent has "been held, if valid, to be so limited as to be not infringed by a structure substantially the same as petitioner's by the District Court of the Southern District of New York, New Jersey, Ohio and California, and by the Circuit Courts of Appeals of the Second and Ninth Circuits."

The New Jersey decision referred to is the reversed decision of Judge Bodine in the *Brandes case*, and the

decisions in the District Court of California and in the Ninth Circuit Court of Appeals are the decisions in the *Rola case* now before this Court.

It is utterly misleading for counsel to say that the structures involved in the Western Electric case (Southern District of New York and the Second Circuit Court of Appeals) and in the Crosley case (Ohio District Court) are "substantially the same as petitioner's."

Judge Thacher and the Second Circuit Court of Appeals excluded the double cone Western Electric loudspeaker* from the scope of Hopkins' patent, but only because **it was held** on the evidence in that record **that the different structure of the double cone Western Electric arrangement,** as compared with the single cone structure like Hopkins or petitioner's here, **resulted in a different mode of operation.****

None of the things said by the courts about the Western Electric device can be said about petitioner's devices. It cannot be said of them that it is not the outer edge of the tympanum (cone plus rim) that is mounted in the annular support, or that the annular rim does not encircle the conical portion of the tympanum, or that the cone is not freely exposed to unconfined air. Nor is there doubt that in petitioner's device the flexible annular rim serves as a hinge permitting bodily movement of the cone, like the patented device, and unlike the mode of operation which those courts found in the Western Electric structure. Nor is there in petitioner's device any such confined air chamber formed between a front cone and a rear cone frustum, as was present in the Western Electric structure.

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*See drawing, Pamphlet, opp. page 443.

**See Judge Thacher's opinion, Pamphlet, pages 35-37; the opinion of the Second Circuit Court of Appeals in the *Sylo case*, Pamphlet, pages 23-4; and the opinion of the Second Circuit Court of Appeals in the *Western Electric case*, Pamphlet, pages 39-42.

Petitioner's counsel couple their erroneous assertion that the Western Electric device is "substantially the same as petitioner's" with the suggestion that when Galston, D. J., in the Eastern District of New York recently decided the *Colonial case*,* he "ignored" the decision in the Ninth Circuit and also the opinions of his own Court of Appeals in the *Sylo* and *Western Electric cases* (footnote, brief, p. 6). We do not think that the District Court Judges ignore the decisions of their own Courts of Appeals. Certainly Judge Galston did not. It is clear from Judge Galston's opinion that he differed from the Ninth Circuit Court of Appeals fundamentally and agreed with the Third Circuit Court of Appeals, from whose opinion he quotes (Pamphlet, pp. 120-1). He twice refers in his opinion to the decisions of his own Court of Appeals in the *Sylo* and *Western Electric cases* (Pamphlet, pp. 113-120), and he also comments upon the decision in the Sixth Circuit (Pamphlet, p. 121). The fact of the matter is that Judge Galston recognized, as we think any intelligent person must do, that the question of infringement in the *Western Electric case* was very different from the question of infringement by the Colonial loudspeaker, which is identical with petitioner's loudspeaker. His decision was not written in ignorance of the earlier decisions of his own Court of Appeals, but with intelligent recognition that the validity affirmed by the earlier decisions in his circuit clearly embraces a monopoly inclusive of petitioner's structure here.

The remark of petitioner's counsel that the device involved in the Crosley case is "substantially the same as petitioner's" is about as far from the truth as the same statement is with respect to the device involved in the Western Electric case.

Lektophone Corp. vs. *Colonial, etc., Corp.*, Pamphlet, page 112.

In the Crosley loud speaker (see drawing opposite p. 72 of the pamphlet) the peripheral edge of the cone was nested between felt rings supported by a metal frame. Defendant's position was that the cone had no flexible rim and so avoided infringement. Judge Hickenlooper agreed with defendant saying (Pamphlet, p. 73):

> "So long as the defendant's means of accomplishing the desired result is not merely the substitution of the mechanical equivalent for that of Hopkins, there can be no infringement.
>
> Limited and narrowed as we find the claims of Hopkins must be, and different in nature, function and operation as we understand the felt channel at the base of the cone of the defendant to be, from the annular rim of Hopkins, we are constrained to hold that, conceding the validity of the complainant's patents (not re-examined and upon which we give no opinion), there has here been no infringement."

And (Pamphlet, p. 71)

> "We therefore hold that by the prior art, by the claims as drawn, by the essence and exact nature of the invention as disclosed, and by the estoppel created in the Patent Office proceedings, the patentee here is limited to a diaphragm having the annular rim, rigidly held, and to a comparatively narrow range of equivalents. *The loose rubber ring of Brandes may be such equivalent* but the total absence of any annulus cannot be so considered." (Emphasis ours.)

CONCLUSION.

We therefore submit that the Hopkins patent is valid; that it is infringed by petitioner's structures; and that this Court should direct the Third Circuit Court of Appeals to affirm the judgment of the District Court for the District of Delaware.

Respectfully submitted,

WILLIAM H. DAVIS,
of Counsel.

Dated, New York, N. Y.,
October 21, 1930.

SUPREME COURT OF THE UNITED STATES.

Nos. 19 and 68.—October Term, 1930.

19	Lektophone Corporation, *vs.* The Rola Company.	On Writ of Certiorari to the United States Circuit Court of Appeals for the Ninth Circuit.
68	Miller Brothers Company, *vs.* Lektophone Corporation.	On Writ of Certiorari to the United States Circuit Court of Appeals for the Third Circuit.

[December 8, 1930.]

Mr. Justice Holmes delivered the opinion of the Court.

These are two suits brought by the Lektophone Corporation alleging the infringement of a patent. In the first named, No. 19, in the Ninth Circuit, the decision was for the defendant, 34 F. (2d) 764, affirming the decree of the District Court, 27 F. (2d) 758, and declining to follow the Third Circuit's decision in *Lektophone Corporation* v. *Brandes Products Corporation*, 20 F. (2d) 155. A writ of certiorari was granted by this Court, 280 U. S. 551. Later, the second of the suits before us, No. 68, was brought in the Third Circuit, and the District Court, in obedience to the precedent there, decided for the plaintiff, 37 F. (2d) 580. An appeal was taken to the Circuit Court of Appeals. A writ of certiorari was granted by this Court without the formality of awaiting the result. 281 U. S. 713.

The patent is No. 1,271,529, granted July 2, 1918, to Hopkins, assignor, by mesne assignments, to the Lektophone Corporation; the original application having been filed July 14, 1913, in the time of the phonograph and before the days of radio, for an "Improvement in Acoustic Devices." The object is the "direct propagation, in free air, from a record or equivalent element subjected to the action of the original sound waves or vibrations, of self-

sustaining sound waves substantially corresponding in intensity and amplitude, as well as in pitch or timbre, to the said original sound waves": as distinguished from the then prevailing use of the sound box and horn. The device, as set forth in claim 8, comprised "a tympanum embodying a bodily movable, central conical portion, and an annular rim which encircles said conical portion and which is rigidly supported, said conical portion being freely exposed on all sides to unconfined air and being of sufficient area to produce self-sustaining sound waves in the surrounding air when vibrated." On the question what is a sufficient area the patent says, "If satisfactory regeneration by sounds from a record or other sound-vibrated element is to be had, the whole diameter of the tympanum, that is, the diameter of the aperture in the rings [that rigidly clamp the edges of the tympanum] should exceed nine inches." "The diameter of the base of said conical portion should be at least eight-tenths of the diameter of the said aperture" —with further details. Paper is pronounced a satisfactory material, the requirement being that it should be crisp and strong and have considerable rigidity within itself.

The state of the art at and before 1913 will be found in the cases already cited, two excellent discussions by Thacher, D. J., in *Lektophone Corporation* v. *Western Electric Co.*, 20 F. (2d) 150 and Hickenlooper, D. J., in *Lektophone Corporation* v. *Crosley Radio Corporation*, Southern District of Ohio, not reported, and in the English case of *Lektophone Corporation* v. *S. G. Brown, Ltd.*, Ch. Div., January 23, 1929; Court of Appeals, July 12, 1929. It is unnecessary to repeat, because it is conceded that the conical tympanum and material were known in connection with a sound box for the phonograph of which Hopkins was thinking, as shown by the words 'from a record' quoted from the patent. The effect of increasing the size of the cone also was known. The contribution of Hopkins, if he made one, as held in several cases in the lower Courts and abroad, was to combine abandoning the sound box, determining the size of the cone deemed by him most suitable to reproduce the sounds communicated to it by vibration, and tightly gripping and rigidly supporting the outer edge of the cone between two rings. A result claimed for the rigid support, although seemingly not thought of at the time, is to avoid interfering sounds, 'blasting' and rattling, that were made when the edge of the cone was loose. As said by Hickenlooper, J., "All of these elements in

combination went to make up the novelty of his alleged invention." "To the size, shape and proportion thus disclosed the patentee is limited by the prior art and the very essence of his invention." If the patent was valid it must be confined narrowly to the combination described.

In No. 19 the defendant's device is very like that of the plaintiff but differs in at least one particular. The plaintiff's cone, of crisp, strong, more or less rigid material, is continued in one piece under the rings that give it a rigid support. Its tympanum includes this outer edge. On the other hand, as said by Judge Thacher about another contrivance, "the defendant's structure, although it comprises a tympanum support having a circular aperture, does not comprise a tympanum having its outer edge rigidly mounted on said support in said aperture within the meaning of claim 4. Nor does it comprise an annular rim which encircles the conical portion of the tympanum within the meaning of claim 8." *Lektophone Corporation* v. *Western Electric Co.*, 20 F. (2d) 150, 154. The defendant's tympanum is only the paper cone, distinct from the rim. The rim is made of limp leather. In view of the importance attached to this element in the plaintiff's patent it is impossible to say that it is infringed. To quote again from the last cited case, "to hold that the defendant's device comprises 'a tympanum rigidly supported at its periphery' within the meaning of the claims is to construe the claims contrary to the plain import of their terms;" and the Judge refers to experiments that showed the difference in function of the two devices. *Ibid.* There are other questions that would have to be answered before the plaintiff could prevail, such as the difference in size, argued in this case, 27 F. (2d) 758, 760; s. c. on appeal, 34 F. (2d) 764, 773; the size being regarded by Hopkins as of the essence of his invention. But we think the matter too plain to need more words. The same conclusion applies to the second case where the rim is made of cloth.

Decree in No. 19 affirmed.
Decree in No. 68 reversed.

The CHIEF Justice took no part in the decision of these cases.

A true copy.

Test:

Clerk, Supreme Court, U. S.